

Shadow, and the refractions of the Prism in all these cases remained the same.

EXPER. III.

Fig. 3. Such another Experiment may be more easily tried as follows. Let a broad beam of the Sun's Light coming into a dark Chamber through a Hole in the Window shut be refracted by a large Prism ABC, whose refracting Angle C is more than 60 degrees, and so soon as it comes out of the Prism let it fall upon the white Paper DE glewed upon a stiff plane, and this Light, when the Paper is perpendicular to it, as 'tis represented in DE, will appear perfectly white upon the Paper, but when the Paper is very much inclined to it in such a manner as to keep always parallel to the Axis of the Prism, the whiteness of the whole Light upon the Paper will according to the inclination of the Paper this way, or that way, change either into yellow and red, as in the posture *de*, or into blue and violet, as in the posture *de*. And if the Light before it fall upon the Paper be twice refracted the same way by two parallel Prisms, these Colours will become the more conspicuous. Here all the middle parts of the broad beam of white Light which fell upon the Paper, did without any confine of shadow to modify it, become coloured all over with one uniform Colour, the Colour being always the same in the middle of the Paper as at the edges, and this Colour changed according the various obliquity of the reflecting Paper, without any change in the refractions or shadow, or in the Light which fell upon the Paper. And therefore these Colours are
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to be derived from some other cause than the new modifications of Light by refractions and shadows.

If it be asked, What then is their cause? I answer, That the Paper in the posture *de*, being more oblique to the more refrangible rays than to the less refrangible ones, is more strongly illuminated by the latter than by the former, and therefore the less refrangible rays are predominant in the reflected Light. And wherever they are predominant in any Light they tinge it with red or yellow, as may in some measure appear by the first Proposition of the first Book, and will more fully appear hereafter. And the contrary happens in the posture of the Paper *de*, the more refrangible rays being then predominant which always tinge Light with blues and violets.

EXPER. IV.

The Colours of Bubbles with which Children play are various, and change their situation variously, without any respect to any confine of shadow. If such a Bubble be covered with a concave Glass, to keep it from being agitated by any wind or motion of the Air, the Colours will slowly and regularly change their situation, even whilst the Eye, and the Bubble, and all Bodies which emit any Light, or cast any shadow, remain unmoved. And therefore their Colours arise from some regular cause which depends not on any confine of shadow. What this cause is will be shewed in the next Book.

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